Investigation of the impact of surface boundary forcing on South American monsoon system (SAMS) using coupled global and regional atmosphere/land surface models

Progress Report

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Period:	1 October 2006 - 31 December 2007

Report Figures

Winter average SA low-level jet

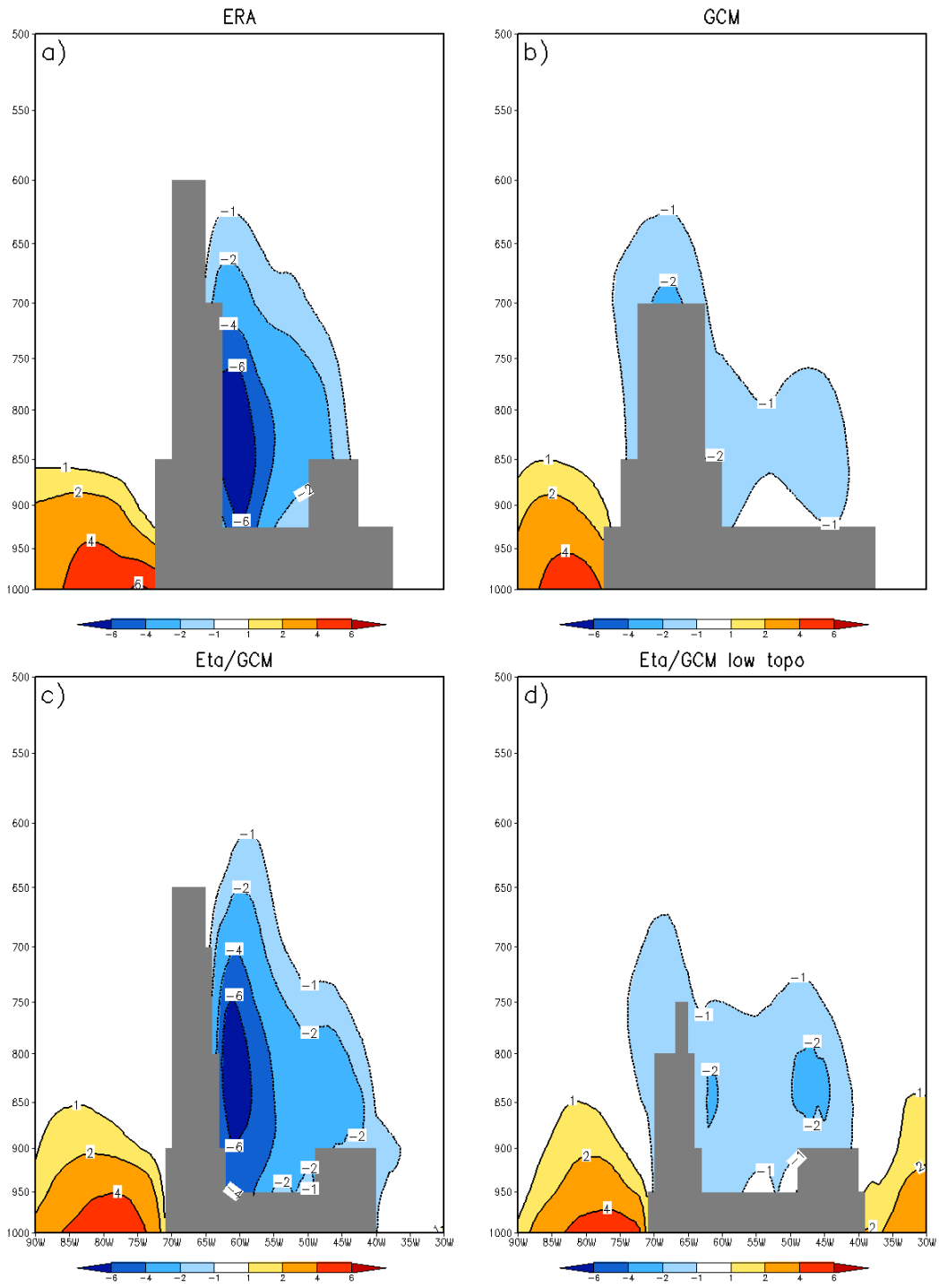

Figure 1. Pressure-longitude cross section of average meridional moisture flux for JJA97 and JJA88 along 25°S for a) ERA, b) GCM, c) Eta/GCM, and d) Eta/GCM w/ low topography. Unit: 10^{-2} kg m s^{-1} kg^{-1}.

Winter SA low-level jet interannual variability

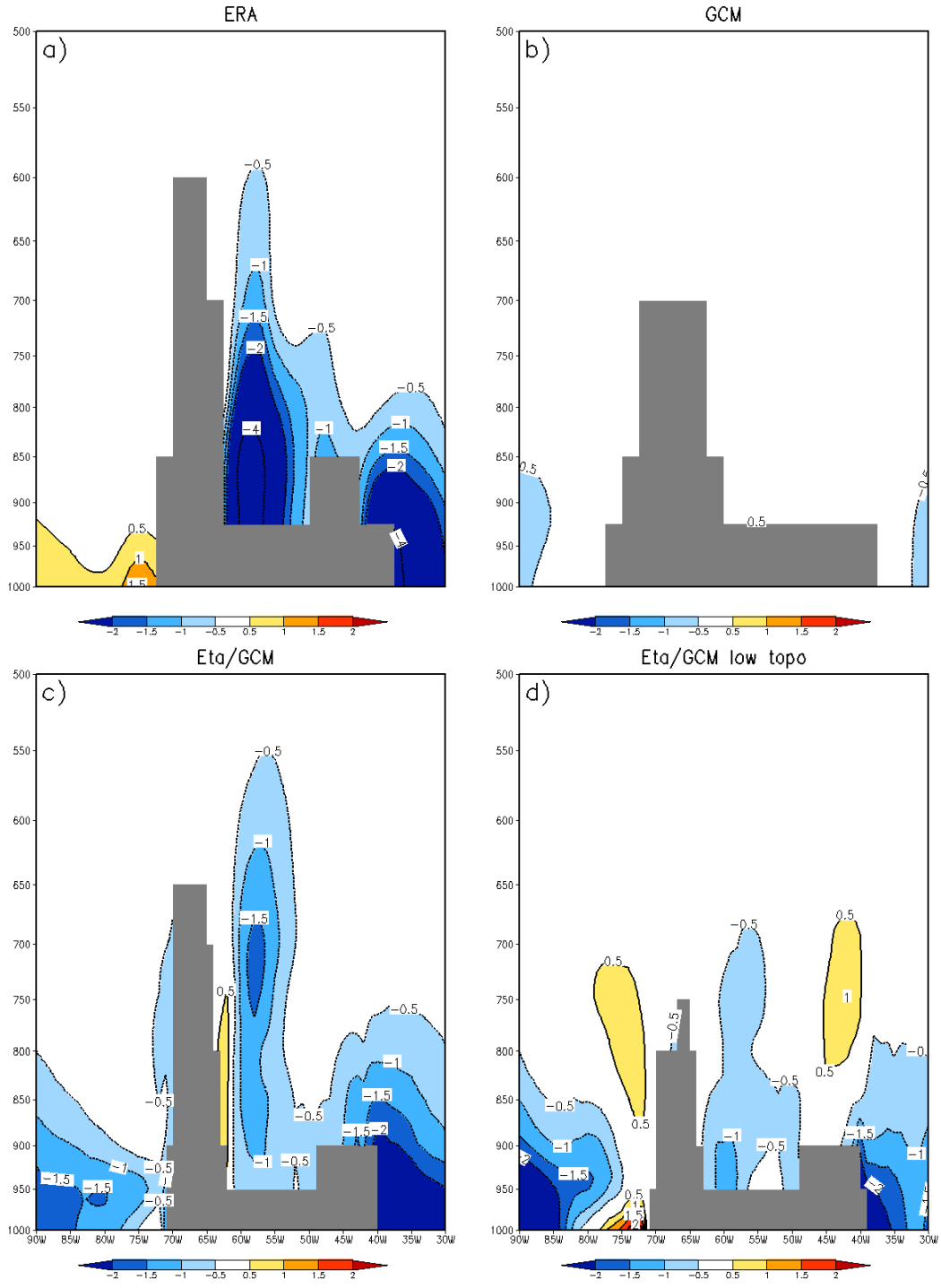

Figure 2. Pressure-longitude cross section of meridional moisture flux difference between JJA97 and JJA88 along 25°S for a) ERA, b) GCM, c) Eta/GCM, and d) Eta/GCM w/ low topography. Unit: 10^{-2} kg m s^{-1} $kg^{-1.}$.

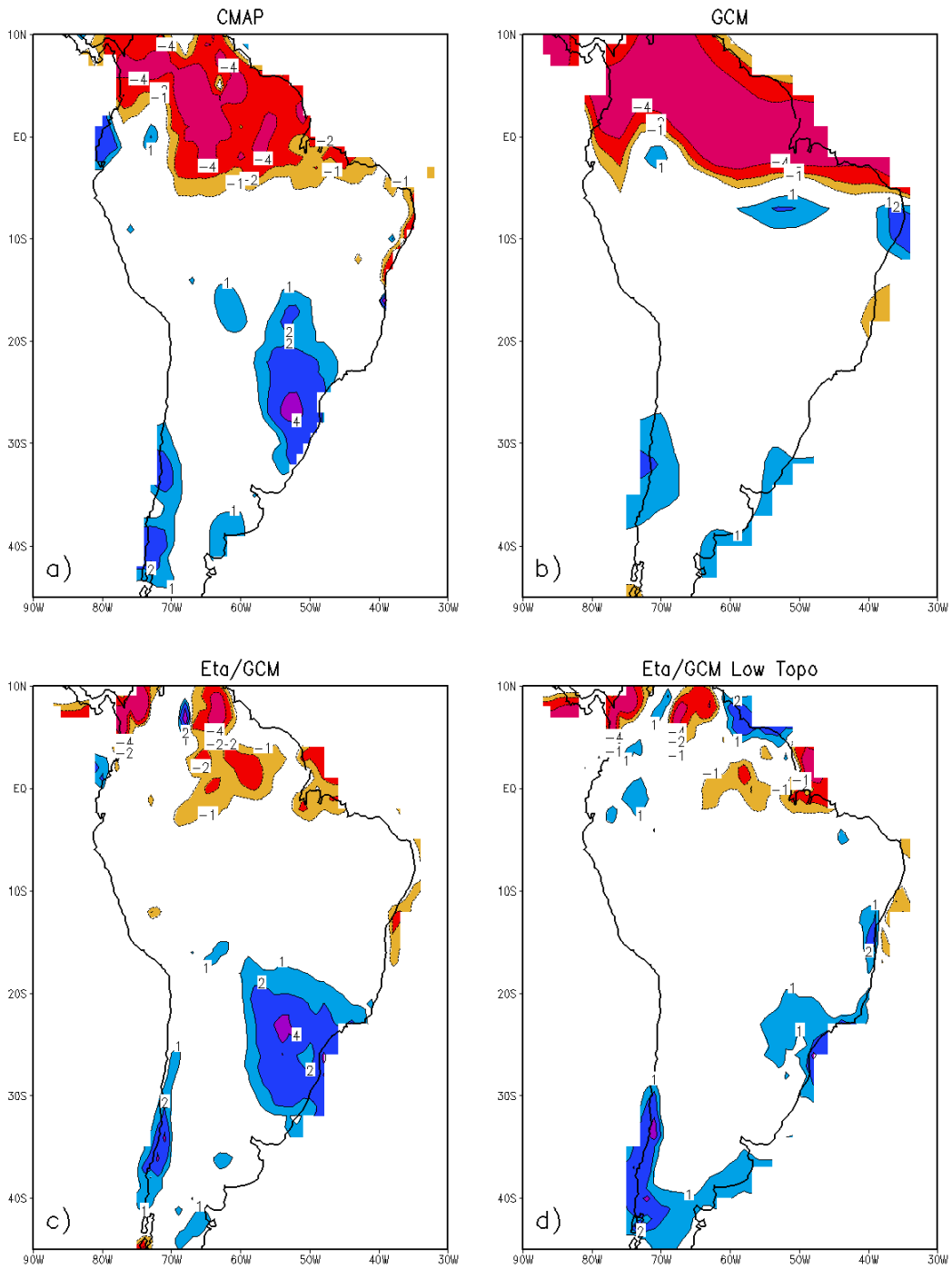

Figure 3. Average precipitation difference between JJA97 and JJA88 from a) CMAP, b) GCM, c) Eta/GCM, and d) Eta/GCM w/ low topography. Unit: mm day^{-1}.

Summer average SA low-level jet

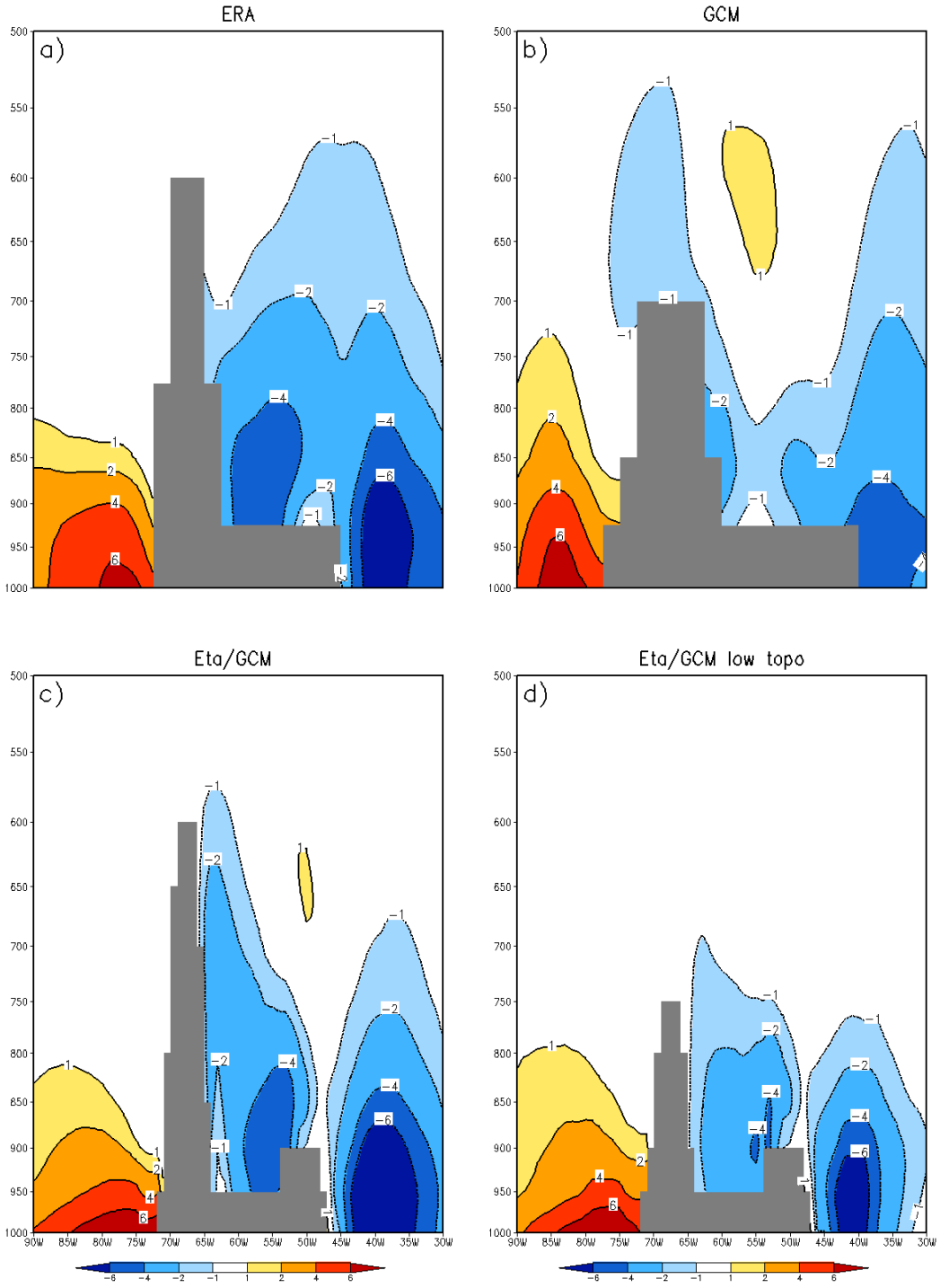

Figure 4. Pressure-longitude cross section of average meridional moisture flux for DJF88 and DJF97 along 25°S for a) ERA, b) GCM, c) Eta/GCM, and d) Eta/GCM w/ low topography. Unit: 10^{-2} kg m s^{-1} kg^{-1}.

Summer SA low-level jet interannual variability

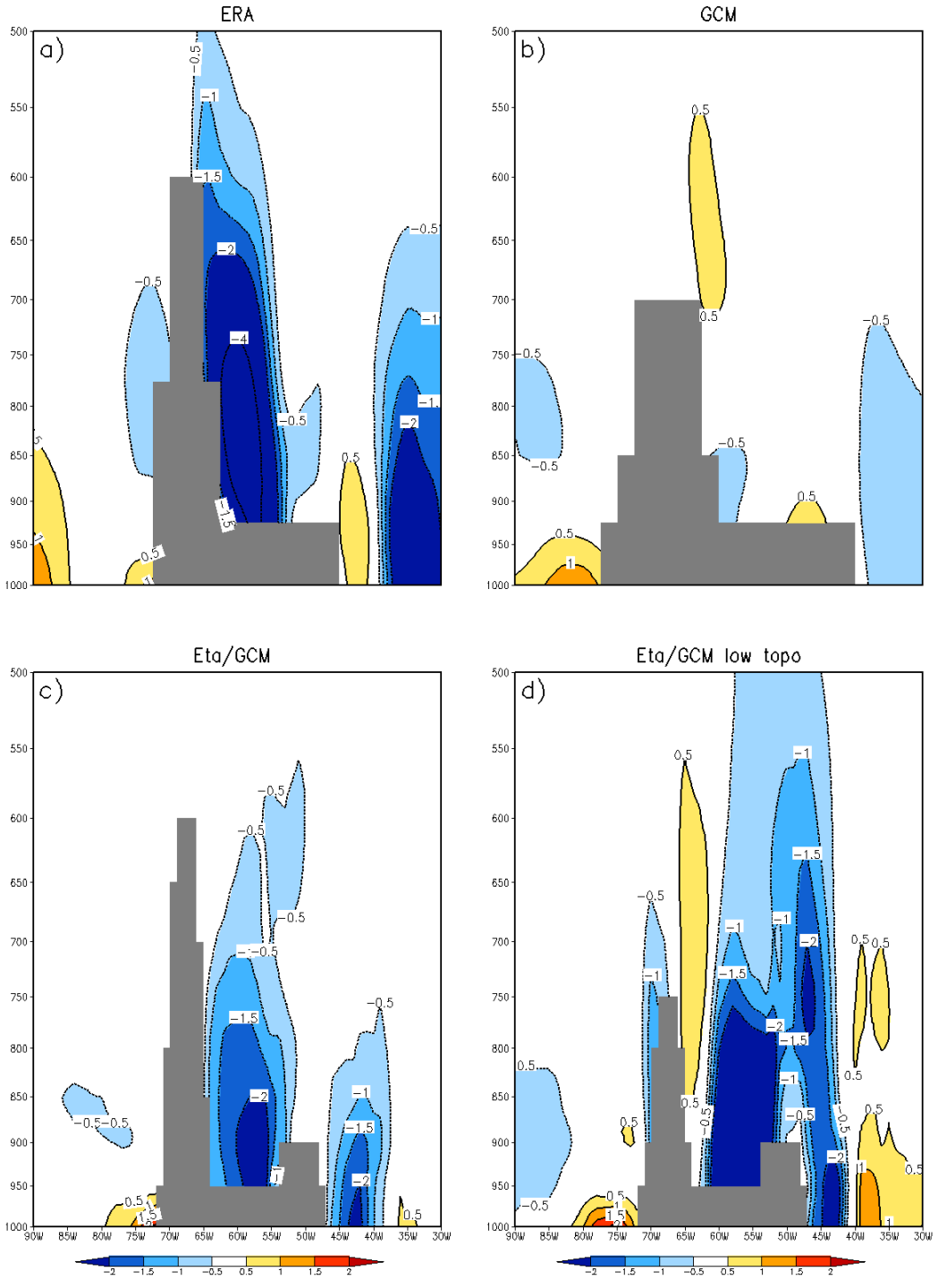

Figure 5. Pressure-longitude cross section of meridional moisture flux difference between DJF97 and DJF88 along 25°S for a) ERA, b) GCM, c) Eta/GCM, and d) Eta/GCM w/ low topography. Unit: 10^{-2} kg m s^{-1} kg^{-1}.

Figure 6. Summer precipitation distribution over the La Plata basin

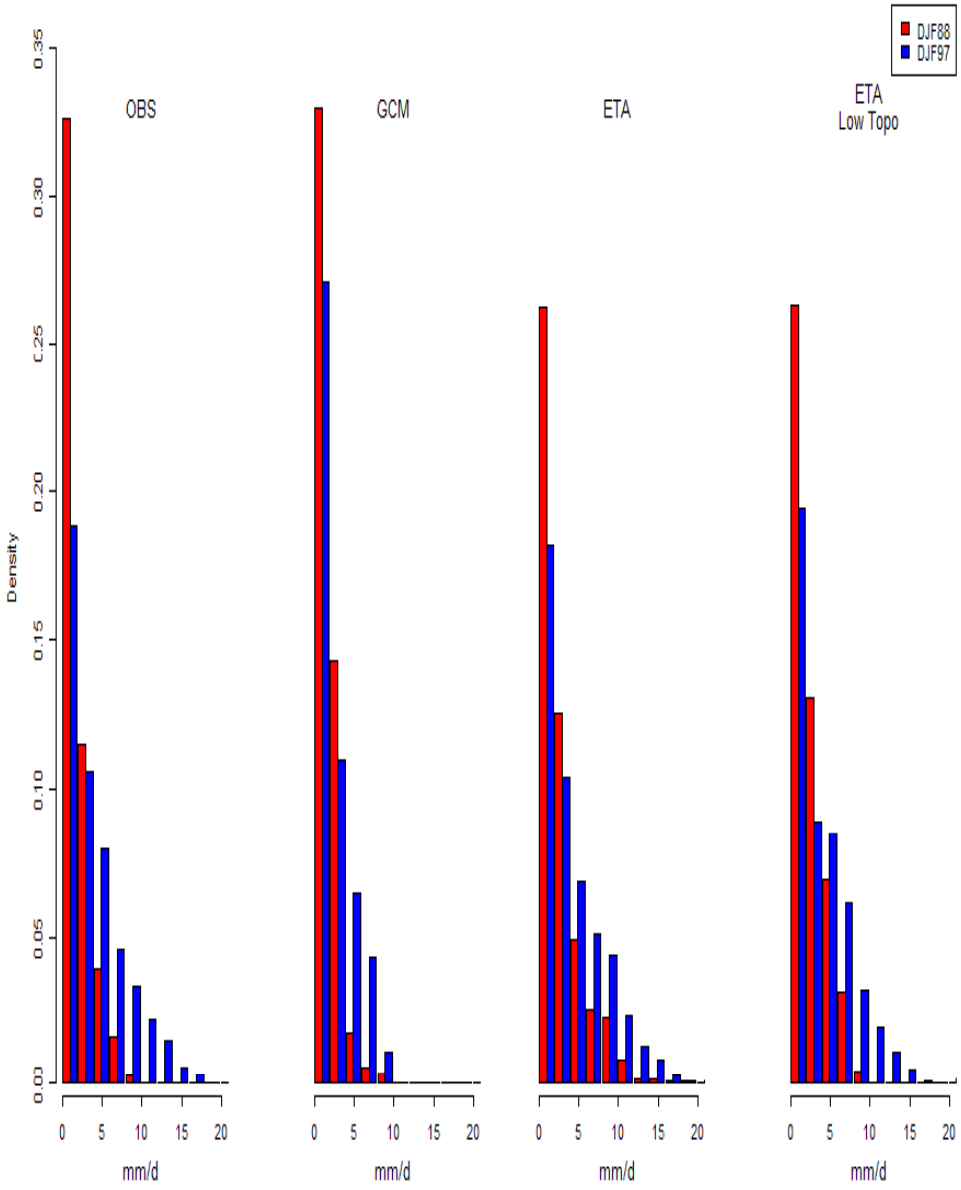

Figure 7. Winter precipitation distribution over Southeastern Brazil

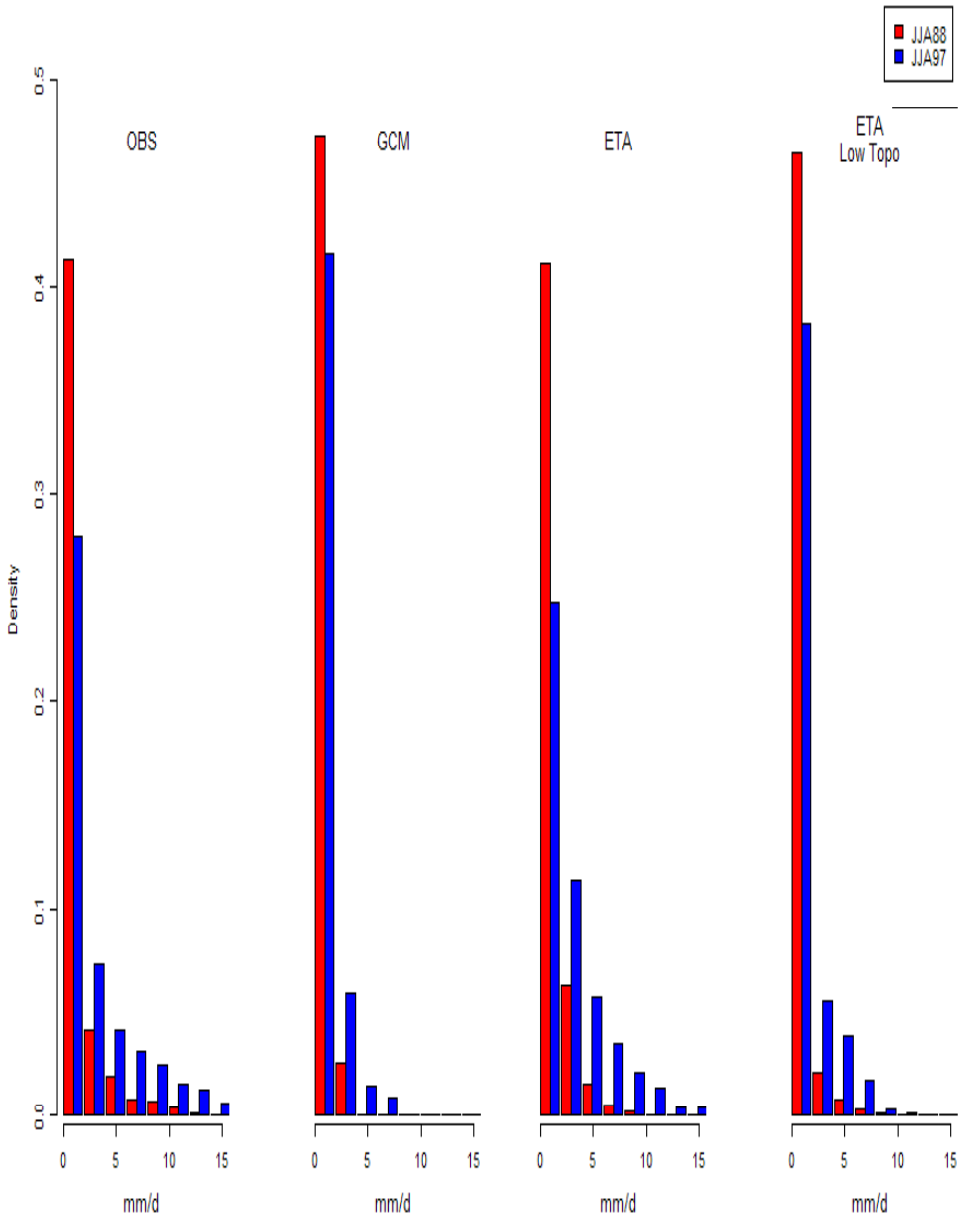

Table: Precipitation difference between DJF97 and DJF88 [mm/day]

	LaPlata	Amazon
OBS	4.22	-1.96
GCM	0.07	-1.34
ETA/GCM	2.11	-0.34

Table: Precipitation difference between JJA97 and JJA88 [mm/day]

	SE Brazil	Amazon
OBS	1.90	-3.18
GCM	0.23	-3.28
ETA/GCM	1.60	-2.20